

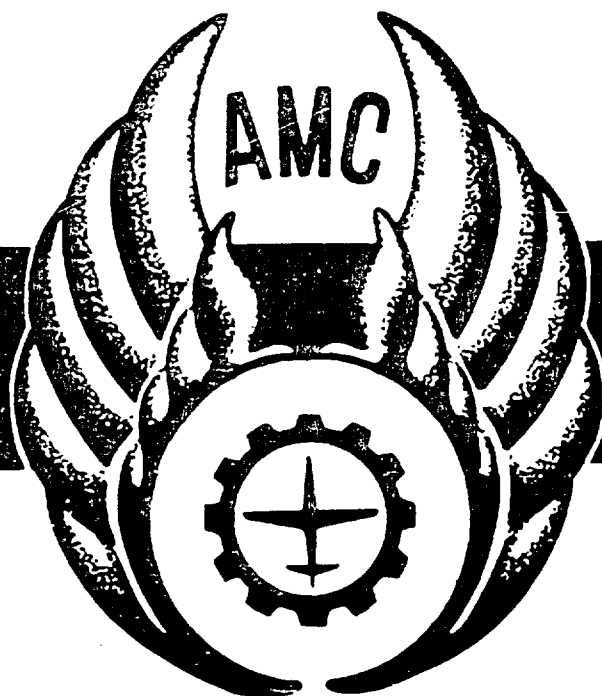
# UNCLASSIFIED

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AUTHORITY
Air Force Materiel Command ltr dtd 19 Feb 2002

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WRIGHT-PATTERSON AIR FORCE BASE  
DAYTON, OHIO**

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46129

**UNCLASSIFIED**

**Flight Test Program for Model P-86 Airplane Class - Jet Propelled Fighter**

46129

(Not known)

(None)

North American Aviation, Inc., Inglewood, Calif.  
USAF Contract W33-038-ac-16013

R-NA46-994

(None)

Dec '46    Unclass.    U.S.    English    7    (None)

Contractual flight test requirements for the F-86 turbojet fighter are presented. The program consists of the following steps: Preliminary tests, ground tests, initial flights; shakedown flights, preliminary structural checks, general handling characteristics and preliminary structural demonstrations; final compliance tests in the demonstration of the contractor's model specification; and ground and functional flight test procedure for production of F-86 airplanes.

Copies of this report obtainable from Central Air Documents Office; Attn: MCIDXD

Flight Testing (13)

F-86 - Flight tests (34556.62); Flight

Flight Tests of Specific Airplanes (10)

testing techniques, High speed (38454); Airplanes - Flight characteristics (08443); Airplanes - Turning characteristics (08491.9)

Air Documents Division, T-2  
AMC, Wright Field  
Microfilm No.

RC2016F

~~ATTN: NO. 46129~~

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NA-46-9914

## NORTH AMERICAN AVIATION, INC.

INGLEWOOD, CALIF

## ENGINEERING DEPARTMENT

## FLIGHT TEST PROGRAM

FOR

MODEL P-86 AIRPLANE

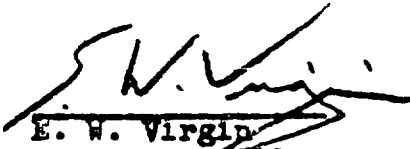

CLASS - JET PROPELLED FIGHTER

CONTRACT W33-038 ac-16013

## PREPARED BY

Engineering Flight Test

## APPROVED BY

  
E. W. Virgin  
Chief Test Pilot  
L. L. Waite  
Chief Technical Engineer

No. of Pages...6

## REVISIONS

Date 12-2-46

DATE	REV. BY	PAGES AFFECTED	REMARKS

CONTRACT  
SPECIFICATION



PREPARED BY: J.B.S.	NORTH AMERICAN AVIATION, INC. INGLEWOOD, CALIFORNIA	PAGE NO. 1 OF 5
CHECKED BY: G.R.H.		REPORT NO. NAM-001
DATE: 12-2-46		MODEL NO.

FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE  
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**INTRODUCTION:**

This report presents contractual flight test requirements for the P-86 airplane.

Prior to the flight test program, the airplane must be inspected and approved for flight by the Air Materiel Command.

CONTRACT  
AMPLIFICATION

PREPARED BY: J.B.S.	NORTH AMERICAN AVIATION, INC. INGLEWOOD, CALIFORNIA	PAGE NO. 2 OF 6
CHECKED BY: G.R.H.		REPORT NO. NA46-994
DATE: 12-2-46		MODEL NO.

**FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE**  
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**PART I: PRELIMINARY TESTS**

**A. Ground Tests:**

1. Power plant installation tests (engine controls, critical cooling temperatures, fuel system operation, emergency fuel system operation, cockpit conditioning, thrust calibration, etc.)
2. Hydraulic, electrical, and radio system checks
3. Taxi tests:
  - a. Brake and steering mechanism check
  - b. General ground handling

**B. Initial Flights:**

Preliminary stall tests, general handling qualities at medium speeds, check of critical temperatures and general power plant and power plant installation tests.

PREPARED BY: J.R.S.	NORTH AMERICAN AVIATION, INC. INGLEWOOD, CALIFORNIA	PAGE NO. 3 OF 4
CHECKED BY: G.R.H.		REPORT NO. RA46-904
DATE: 12-2-46		MODEL NO.

**FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE**

**PART II: SHAKEDOWN FLIGHTS**

**A. Preliminary Functional Checks**

1. Preliminary functional checks of all controls and equipment essential for flight
2. Airspeed position error calibrations
3. Determination of stalling speeds and maximum lift coefficients

**B. General Handling Characteristics and Preliminary Structural Demonstration:**

1. Sufficient longitudinal stability data to establish unaccelerated and accelerated flight neutral C.G. positions
2. Sufficient data to establish directional stability and control characteristics in sideslips
3. Lateral control and aileron effectiveness tests at several speeds
4. Trim tab and horizontal stabilizer effectiveness tests
5. Take off and landing characteristics
6. Brief qualitative stability and control checks not covered above (dynamic stability, spiral stability, etc.)
7. Spin test demonstration
8. Dives and accelerations at design gross weight condition (13,311#) provided they are not limited by stability and control characteristics or excessive stresses. Airplane in minimum drag configuration for parts a, b, and c, and with dive brakes open at the start of the dives for parts d and e.
  - a. Dive to the highest Mach number attainable with satisfactory stability and control, but not to exceed a Mach

PREPARED BY: J.B.S.	NORTH AMERICAN AVIATION, INC. INGLEWOOD, CALIFORNIA	PAGE NO. 4 OF 6
CHECKED BY: G.R.H.		REPORT NO. NA46-925
DATE: 12-2-46		MODEL NO.

**FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE**  
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**PART II: (Cont'd)**

- B. 8. a. number of .93 at an equivalent air-speed optional with the contractor
- b. Dive to an equivalent airspeed ( $V_T \times \sqrt{1/2}$ ) of 575 mph, at a Mach number optional with the contractor
- c. At a speed not in excess of maximum level flight speed, at 10,000 ft., obtain accelerations in steady turns at 2, 4, and 6 load factors and in pull-ups and push-overs to +6.0 to -0.5 load factors.
- d. Dive to the highest Mach number attainable with satisfactory stability and control, but not to exceed a Mach number of .90, at an equivalent airspeed optional with the contractor
- e. Dive to an equivalent airspeed ( $V_T \times \sqrt{1/2}$ ) of 550 mph, at a Mach number optional with the contractor
9. Flight tests required by contractor to correct deficiencies uncovered in above flights

CONTRACT SPECIFICATION

PREPARED BY: J.E.S.	NORTH AMERICAN AVIATION, INC. INGLEWOOD, CALIFORNIA	PAGE NO. 5 6
CHECKED BY: G.R.H.		REPORT NO. NA46-904
DATE: 12-2-46		MODEL NO.

FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE

**PART III: FINAL COMPLIANCE TESTS IN THE DEMONSTRATION OF THE CONTRACTOR'S MODEL SPECIFICATION**

**A. Stability and Control Characteristics:**

Final stability and control evaluations in compliance with R-1815-A Specification

**B. Final performance tests on high speed at various altitudes and rate of climb**

**C. Final compliance tests, structural demonstration flight:**

Demonstrations in accordance with EG. Serial No. ENG-51-4515-1, Add. 16, except that the dive angle shall be the maximum attainable with satisfactory stability and control, but not to exceed 50°, and provided that the structural design loads are not exceeded

**D. Heating, ventilating, and carbon monoxide tests**

CONTRACT SPECIFICATION

DESIGNED BY <b>J.B.S.</b>	<b>NORTH AMERICAN AVIATION, INC.</b> INGLEWOOD, CALIFORNIA	PAGE NO. <b>6</b> OF <b>6</b>
BY <b>G.R.M.</b>		REPORT NO. <b>NA-6-991</b>
DATE <b>12-2-46</b>		MODEL NO.

**FLIGHT TEST PROGRAM  
FOR MODEL P-86 AIRPLANE**  
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**PART IV: GROUND AND FUNCTIONAL FLIGHT TEST PROCEDURE FOR  
PRODUCTION P-86 AIRPLANES:**

The procedure for ground and functional flight tests shall be in accordance with Specification R-1200-F, Amendment No. 5, dated 28 May 1945, except for the following paragraphs: F-11d(1)(c), F-11d(1)(c), and F-11e. These paragraphs do not apply to jet engines. F-13 - the initial and acceptance test flights shall be considered as one flight, and shall not exceed one hour's duration. This shortened duration is considered desirable in order to save engine operation.

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR FORCE MATERIEL COMMAND  
WRIGHT-PATTERSON AIR FORCE BASE OHIO

FEB 19 2002

MEMORANDUM FOR DTIC/OCQ (ZENA ROGERS)  
8725 JOHN J. KINGMAN ROAD, SUITE 0944  
FORT BELVOIR VA 22060-6218

FROM: AFMC CSO/SCOC  
4225 Logistics Avenue, Room S132  
Wright-Patterson AFB OH 45433-5714

SUBJECT: Technical Reports Cleared for Public Release

References: (a) HQ AFMC/PAX Memo, 26 Nov 01, Security and Policy Review,  
AFMC 01-242 (Atch 1)

(b) HQ AFMC/PAX Memo, 19 Dec 01, Security and Policy Review,  
AFMC 01-275 (Atch 2)

→ (c) HQ AFMC/PAX Memo, 17 Jan 02, Security and Policy Review,  
AFMC 02-005 (Atch 3)

1. Technical reports submitted in the attached references listed above are cleared for public release in accordance with AFI 35-101, 26 Jul 01, *Public Affairs Policies and Procedures*, Chapter 15 (Cases AFMC 01-242, AFMC 01-275, & AFMC 02-005).

2. Please direct further questions to Lezora U. Nobles, AFMC CSO/SCOC, DSN 787-8583.

LEZORA U. NOBLES  
AFMC STINFO Assistant  
Directorate of Communications and Information

Attachments:

1. HQ AFMC/PAX Memo, 26 Nov 01
2. HQ AFMC/PAX Memo, 19 Dec 01
3. HQ AFMC/PAX Memo, 17 Jan 02

cc:  
HQ AFMC/HO (Dr. William Elliott)





# DEPARTMENT OF THE AIR FORCE

HEADQUARTERS AIR FORCE MATERIEL COMMAND  
WRIGHT-PATTERSON AIR FORCE BASE OHIO

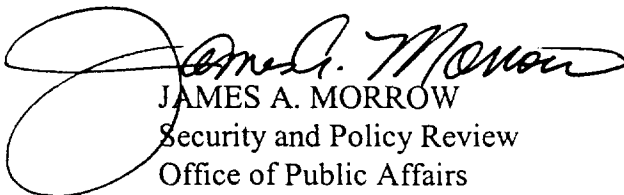
JAN 17 2002

MEMORANDUM FOR HQ AFMC/HO

FROM: HQ AFMC/PAX

SUBJECT: Security and Policy Review, AFMC 02-005

1. The reports listed in your attached letter were submitted for security and policy review IAW AFI 35-101, Chapter 15. They have been cleared for public release.
2. If you have any questions, please call me at 77828. Thanks.

  
JAMES A. MORROW  
Security and Policy Review  
Office of Public Affairs

Attachment:  
Your Ltr 14 January 2002

14 January 2002

MEMORANDUM FOR: HQ AFMC/PAX  
Attn: Jim Morrow

FROM: HQ AFMC/HO

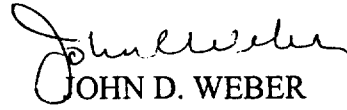
SUBJECT: Releasability Reviews

1. Please conduct public releasability reviews for the following attached Defense Technical Information Center (DTIC) reports:


- a. *Flight Test Program for Model P-86 Airplane Class – Jet Propelled Fighter*, 2 December 1946; DTIC No. AD-B804 069.
- b. *Physiological Recognition of Strain in Flying Personnel: Eosinopenia in F-86 Combat Operations*, September 1953; DTIC No. AD- 020 375.
- c. *Phase IV Performance Test of the F-86F-40 Airplane Equipped with 6x3-inch Leading Edge Slats and 12-inch Extensions on the Wing Tips*, May 1956; DTIC No. AD- 096 084.
- d. *F-86E Thrust Augmentation Evaluation*, March 1957; DTIC No. AD- 118 703.
- e. *F-86E Thrust Augmentation Evaluation*, Appendix IV, March 1957; DTIC No. AD- 118 707.
- f. *A Means of Comparing Fighter Effectiveness in the Approach Phase*, October 1949; DTIC No. AD- 223 596.
- g. *War Emergency Thrust Augmentation for the J47 Engine in the F-86 Aircraft*, August 1955; DTIC No. AD- 095 757.
- h. *Operational Suitability Test of the F-86F Airplane*, 4 May 1953; DTIC No. AD- 017 568.
- i. *Estimated Aerodynamic Characteristics for Design of the F-86E Airplane*, 26 December 1950; DTIC No. AD- 069 271.
- j. *Combat Suitability Test of F-86F-2 Aircraft with T-160 Guns*, August 1953; DTIC No. AD- 019 725.

2. These attachments have been requested by Dr. Kenneth P. Werrell, a private researcher.

3. The AFMC/HO point of contact for these reviews is Dr. William Elliott, who may be reached at extension 77476.

  
JOHN D. WEBER  
Command Historian

10 Attachments:

- 
- a. DTIC No. AD-B804 069
  - b. DTIC No. AD- 020 375
  - c. DTIC No. AD- 096 084
  - d. DTIC No. AD- 118 703
  - e. DTIC No. AD- 118 707
  - f. DTIC No. AD- 223 596
  - g. DTIC No. AD- 095 757
  - h. DTIC No. AD- 017 568
  - i. DTIC No. AD- 069 271
  - j. DTIC No. AD- 019 725

*Excluded*  
TITLE: Flight Test Program for Model P-86 Airplane Class - Jet Propelled Fighter

AUTHOR(S): (Not known)

ORIGINATING AGENCY: North American Aviation, Inc., Inglewood, Calif.

PUBLISHED BY: USAF Contract W33-038-ac-16013

ATI- 46129

REVISION  
(None)

ORIG AGENCY NO.  
R-NA46-994

PUBLISHING AGENCY NO.  
(None)

DATE	DOC CLASS	COUNTRY	LANGUAGE	PAGES	ILLUSTRATIONS
Dec '46	Unclass.	U.S.	English	7	(None)

ABSTRACT:

*F-86 + F-80, Turning Flight P1/1*  
Contractual flight test requirements for the F-86 turbojet fighter are presented. The program consists of the following steps: Preliminary tests, ground tests, initial flights; shakedown flights, preliminary functional checks, general handling characteristics and preliminary structural demonstrations; final compliance tests in the demonstration of the contractor's model specification; and ground and functional flight test procedure for production of F-86 airplanes.

*F-86 Aircraft*  
DISTRIBUTION: Copies of this report obtainable from Central Air Documents Office; Attn: MCIDXD

DIVISION: Flight Testing (TS)

SECTION: Flight Tests of Specific Airplanes (10)

SUBJECT HEADINGS: F-86 - Flight tests (34556,62); Flight testing techniques, High speed (38454); Airplanes - Flight characteristics (08443); Airplanes - Turning characteristics (08491,9)

AIR SHEET NO: R-10-10-1 2/100  
Air Documents Division, Intelligence Department  
Air Materiel Command

AIR 1

**AD-B804 069**